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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/516,516

06/29/2005

Gou Shimada

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5133

23373 7590 06/17/2009
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EXAMINER

PRAKASAM, RAMYA G

ART UNIT

PAPER NUMBER

3651

MAIL DATE

DELIVERY MODE

06/17/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/516,516	Applicant(s) SHIMADA, GOU	
	Examiner RAMYA PRAKASAM	Art Unit 3651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-20 is/are pending in the application.
- 4a) Of the above claim(s) 16-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-14 and 20 is/are rejected.
- 7) ☒ Claim(s) 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/30/2009 has been entered.

Claim Objections

2. Claim 10 is objected to because of the following informalities: it appears that the claim should be read as "and the predetermined rotational angle is an angle beginning at 90 degrees before a position where the height of the flight is lowest and ending at 90 degrees after the position where the height of the flight is lowest". Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 10-14 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Sugano (US Patent No. 6,485,287).

Sugano discloses a screw for use in an extruder comprising:

Art Unit: 3651

- A cylinder (See Figure 1);
- Wherein a height of a flight portion of that part of the screw (11) located below the hopper (5)port is lower than a height of a flight portion located at a downstream side, and said height at said part varies continuously in a peripheral direction over a predetermined rotational angle of the screw and the predetermined rotational angle is an angle beginning at 90 degrees before a position where the height of the flight is lowest and ending at 90 degrees after the position where the height of the flight is lowest (See Figure 1 at 8).
- Wherein a portion where the height of the flight portion is lower than the height of the flight portion on the downstream side has an angle of 180 or less (See Figure 1).
- Wherein the number of threads on an upstream side of the screw is made smaller than a number of threads on the downstream side (See Figures 1 and 6).
- Wherein an interval of the threads on an upstream side is made wider than an interval of the threads on the downstream side (See Figures 1 and 6).
- Wherein the diameters of the threads on an upstream side of the screw are made larger than the diameters of the threads on a downstream side (See Figures 1 and 6).
- Wherein the height of the flight portion located below the hopper port is between 2% and 6% smaller than the diameter of the screw (See Figures 1 and 6).

- Wherein the cylinder has a consistent inner diameter from the hopper port to a last thread of the screw at the downstream end (See Figures 1 and 6).

Allowable Subject Matter

5. Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: Claim 15 recites a screw for use in an extruder with the unique limitation of having the portion of the screw located below the hopper port be 2%-6% smaller than the diameter of the screw at the downstream side. This limitation, in combination with the other limitations of the claims, were not found in the relevant prior art.

Response to Arguments

7. Applicant's arguments filed 3/2/2009 have been fully considered but they are not persuasive.

With regards to applicant's argument that the portion between the blades is not a flight portion, therefore the area underneath the hopper is not a flight portion, a flight can be defined as a series of stairs rising from one landing to another. In this case, it is the heightened portion of the screw. If you look closely at Figure 1 of Sagano, there is a heightened portion of the screw, a lower portion and then a heightened portion. The heightened portion is in fact lower than the heightened portion not underneath the hopper. Also, in that particular portion of the screw, the diameter is smaller. Therefore, this limitation is disclosed.

Art Unit: 3651

8. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., that there be a space between the wall of the cylinder bore and the screw flight and the reentrance of the material in the vicinity of the hopper port) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAMYA PRAKASAM whose telephone number is (571)272-6011. The examiner can normally be reached on Monday - Thursday, 9am - 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Crawford can be reached on (571)272-6911. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3651

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gene Crawford/
Supervisory Patent Examiner, Art
Unit 3651

6/15/2009
RGP